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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/768,153	01/24/2001	Emmanuel Desurvire	Q62793	3628

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EXAMINER	
CURS, NATHAN M	

ART UNIT	PAPER NUMBER
2633	6

DATE MAILED: 02/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/768,153	DESURVIRE, EMMANUEL	
	Examiner	Art Unit	
	Nathan Curs	2633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 2 and 8-11* is/are rejected.

7)☒ Claim(s) *3-7, 12 and 13* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *3*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1 and 11 are rejected under 35 U.S.C. 102(e) as being anticipated by Cao (US Patent No. 6337755).

Regarding claim 1, Cao discloses a regenerator for a wavelength division multiplex transmission system (abstract and Fig. 1, element 10), comprising a demultiplexer adapted to separate the signals of various channels (Figure 1, element 12), a plurality of optical modulators each adapted to receive signals from the demultiplexer (Figure 1, elements 20) and a modulation clock from a clock distribution unit (col. 4, lines 26-35 and col. 6, line 58 to col. 7, line 3), and a multiplexer adapted to combine the signals modulated by said modulators (Figure

1, element 30), wherein the clock distribution unit comprises a reference clock (col. 4, lines 12-16) and, for each modulator, means for synchronizing the phase of a copy of the reference clock with the signals applied to the modulator (col. 4, lines 16-20).

Regarding claim 11, Cao discloses a wavelength division multiplex transmission system comprising a regenerator (col. 2, lines 21-25) according to claim 1 (Figure 1, element 12, 20, and 30; col. 4, lines 26-35; col. 6, line 58 to col. 7, line 3; and col. 4, lines 12-20).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 2 and 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cao (US Patent No. 6337755) in view of Ransijn (US Patent No. 6347128).

Regarding claim 2, Cao discloses a phase synchronization means, comprising a clock recovery circuit, for each modulator (col. 4, lines 16-20), but does not disclose that the means includes a phase-locked loop. Ransijn discloses a self-aligning clock recovery circuit that includes a phase-locked loop (abstract and col. 5, lines 36-51). It would have been obvious to an artisan at the time of the invention to use the phase-locked loop based clock recovery circuit taught by Ransijn, for the clock recovery circuit of Cao, to provide the benefit of a self-aligning clock recovery circuit.

Regarding claim 8, Cao discloses a reference clock supplied by a clock recovery circuit (col. 4, lines 12-16), but does not disclose a voltage-controlled oscillator. Ransijn discloses a

self-aligning clock recovery circuit that has a clock output supplied by a voltage-controlled oscillator (abstract and Figure 6, element 26). It would have been obvious to an artisan at the time of the invention to use the clock recovery circuit with voltage controlled oscillator, taught by Ransijn, for the clock recovery circuit of Cao, to provide the benefit of a self-aligning clock recovery circuit.

Regarding claim 9, Cao in view of Ransijn disclose a clock recovery circuit receiving the signal that is applied to the regenerator (Cao: Figure 1, elements 11, 12, 21, 22, and 24), a clock recovery circuit and a voltage-controlled oscillator controlled in accordance with the signals input to the clock recovery circuit (Ransijn: Figure 6, element "Data in" and col. 5, lines 36-51). It would have been obvious to an artisan at the time of the invention to use the self-aligning clock recovery circuit of Ransijn, where the voltage-controlled oscillator of the clock recovery circuit is controlled in accordance with the signal applied to the regenerator, for the clock recovery circuit of Cao, so that the VCO of the CRC would generate a clock output of the CRC that would be self-aligned with the phase of the input signal.

Regarding claim 10, Cao in view of Ransijn discloses a coupler for sampling a portion of the input signals of the regenerator (Cao: Figure 1, element 16), a clock recovery circuit adapted to receive signals sampled by the coupler (Cao: Figure 1, element 24), and a clock recovery circuit that supplies a control signal for the oscillator (Ransijn: Figure 6, element PD(t) and col. 5, lines 36-51).

Allowable Subject Matter

6. Claims 3-7, 12 and 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

7. Applicant's arguments filed regarding claims 1, 2, and 8-10 have been fully considered but they are not persuasive.

Regarding claim 1, the applicant argues that the applicant teaches a single reference clock whereas the Cao shows a reference clock for each channel. However, the specification is not the measure of invention. Therefore, limitations contained therein cannot be read into the claims for the purpose of avoiding the prior art. *In re Sporck*, 55 CCPA 743, 386 F.2d 924, 155 USPQ 687 (1968).

The applicant requests demonstration of the clock distribution unit, modulation clock, and reference clock of claim 1 in Cao. The clock recovery circuit of Cao is a clock distribution unit since it generates and outputs a clock signal (col. 4, lines 26-35). The output signal of the drive voltage circuit of Cao drives the modulator (col. 4, lines 36-35) and is a clock signal (col. 6, line 58 to col. 7, line 3), so is therefore a modulation clock. The clock signal generated by the clock recovery circuit (col. 4, lines 12-16) is a reference clock, since it is the reference signal from which the drive voltage circuit generates the modulation clock.

The applicant argues that Cao does not disclose a copy of a reference clock. However, Cao teaches that the modulator receives first and second drive signals, or modulation clocks, from the drive voltage circuit (col. 5, lines 20-23) and that these first and second drive signals, generated by the drive voltage circuit, have the same waveform as the clock signal from the clock recovery circuit (col. 6, line 58 to col. 7, line 3), therefore these drive signal modulation clocks are copies of the reference clock.

Regarding claim 2, the applicant argues that Cao does not teach a phase synchronization means; however, in the arguments for claim 1, the applicant concedes that Cao teaches that the clock recovery circuit also functions to adjust the phase of the clock signal so that the clock signal received at the modulator is in phase with the optical channel signal received by the modulator (page 9, lines 4-8). The clock recovery and modulation circuitry of Cao is a phase synchronization means, since adjusting the clock signal to be in phase with the optical channel signal is phase synchronization.

The applicant argues that there would be no reason to combine the phase-locked loop of Ransijn with Cao because there is only a one time phase adjustment in Cao. However, although Cao teaches that the phase adjustment to compensate for any delays introduced by the amplifier, drive voltage circuit, filter, and path differences (col. 4, Lines 20-25) is essentially a one-time phase adjustment, this does not teach away from using a the PLL-based clock recovery circuit of Ransijn for the clock recovery circuit of Cao. Both Cao and Ransijn teach a one time phase adjustment to get the clock signal in phase with the input signal. The phase adjustment disclosed by Ransijn is disclosed as bringing the VCO of the PLL into phase alignment with the input signal (col. 4, lines 30-40). Ransijn does not disclose that the VCO of the PLL goes in and out of phase alignment with the input signal once it has been aligned. Therefore, adjusting the phase from mis-aligned to aligned as disclosed by Ransijn is a one time adjustment.

In response to applicant's argument for claim 2 that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge

gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). The applicant argues impermissible hindsight based on the assertion that substantial reconstruction of the circuit of Cao would be required to include a phase locked loop. However, the clock recovery circuit of Cao has one input signal and one clock output signal, as does the PLL-based clock recovery circuit of Ransijn, and both Cao and Ransijn teach adjusting the phase of the clock recovery circuit to be in phase with the input signal. Using the clock recovery circuit of Ransijn for the clock recovery circuit of Cao would not require substantial reconstruction of the circuit of Cao.

Regarding claims 8-10, the applicant argues that there is no need for a VCO in Cao because Cao teaches that there is only one phase adjustment. However, as indicated above, Ransijn teaches a one time phase adjustment.

Regarding claim 10, the applicant argues that the phase detector output of Ransijn is not a control signal as described in the present invention. However, the specification is not the measure of invention. Therefore, limitations contained therein cannot be read into the claims for the purpose of avoiding the prior art. *In re Sporck*, 55 CCPA 743, 386 F.2d 924, 155 USPQ 687 (1968). Ransijn discloses that the phase detector output, PD(t), controls the speed of the VCO (col. 4, lines 30-40), thus PD(t) is a control signal for the oscillator.

The applicant states that element 24 in Cao was cited by the examiner for teaching a reference clock; however, element 24 cited as the reference clock is the applicant's assumption as stated (page 9, line 17), not the examiner's citation. The applicant requests demonstration of where the prior art demonstrates a reference clock and clock recovery circuit. As indicated above, Cao teaches a clock recovery circuit (element 24) that outputs a reference clock.

8. Regarding claims 3 and 4, the applicant's arguments in response to the first action rejections were not persuasive; however, the applicant modified the modulation clock of claim 3 from "a modulation clock" to "the modulation clock" such that the modulation clock of claim 3 is the same modulation clock of claim 1, overcoming the Cao in view of Ransijn and further in view of Bigo rejections for claims 3 and 4.

9. Applicant's arguments, see page 8, filed 12 December 2003, with respect to claim 7 have been fully considered and are persuasive. The rejection of claim 7 has been withdrawn.

10. Applicant's arguments with respect to claim 2 regarding combining the phase locked loop of Ransijn with Cao, and claims 8-10 regarding combining the VCO of Ransijn with Cao have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

11. Any inquiry concerning this communication from the examiner should be directed to N. Curs whose telephone number is (703) 305-0370. The examiner can normally be reached on M-F (from 9 AM to 5 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan, can be reached at (703) 305-4729. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.